

What is claimed is:

1. In connection with creation of a standardized test comprising a sub-pool of questions, a method of assembling the sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, the method comprising:
 - A. forming a candidate sub-pool by randomly selecting a plurality of questions from the pool;
 - B. testing the candidate sub-pool against the constraints; and
 - C. if the constraints are satisfied, storing the candidate sub-pool as the sub-pool.
2. The method of claim 1 further comprising:
if the constraints are not satisfied, repeating steps A, B, and C.
3. In connection with creation of a standardized test comprising a sub-pool of questions, a method of assembling the sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, the method comprising:
 - A. creating a hierarchical representation of the sub-pool,
wherein the hierarchical representation comprises a root node and at least one other node,
wherein at least one of the other nodes comprises a terminal node, and
wherein the root node is associated with one or more root constraints and each of the other nodes are associated with one or more additional constraints;
 - B. forming a candidate question set comprising randomly selecting a plurality of questions from the pool;
 - C. testing the candidate question set against the additional constraints associated with the terminal node;
 - D. if the additional constraints are satisfied, testing at least the candidate question set against the root constraints.
4. In connection with creation of a standardized test comprising a sub-pool of questions, a method of assembling the sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, the method comprising:
 - A. creating a hierarchical representation of the sub-pool,

wherein the hierarchical representation comprises a root node and at least two other nodes,

wherein at least two of the other nodes each comprise a terminal node, and

wherein the root node is associated with one or more root constraints and each of the other nodes are associated with one or more additional constraints;

B. forming a first candidate question set comprising randomly selecting a plurality of questions from the pool;

C. testing the first candidate question set against the additional constraints associated with a first of the terminal nodes;

D. forming a second candidate question set comprising randomly selecting a plurality of questions from the pool;

E. testing the second candidate question set against the additional constraints associated with a second of the terminal nodes;

F. if the first set of additional constraints and the second set of additional constraints are satisfied, concatenating the first candidate question set and the second candidate question set to form a combined question set; and

H. testing at least the combined set against the root constraints.

5. The method of claim 4 further comprising:

G. if the first set of additional constraints is not satisfied, repeating steps B, C, and F.

6. The method of claim 4 further comprising:

G. if the second set of additional constraints is not satisfied, repeating steps D, E, and F.

7. In connection with creation of a standardized test comprising a sub-pool of questions, a method of assembling the sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, the method comprising:

A. forming a sequence of ranges wherein each range in the sequence imposes a constraint on a scalar property of the sub-pool;

B. randomly forming a vector comprising a plurality of elements, wherein each of the elements in the vector belongs to at least one range from the sequence; and

C. randomly selecting a plurality of questions from the pool to form the sub-pool such that each of the scalar properties of the sub-pool is equal to at least one of the elements of the vector.

8. In connection with creation of a standardized test comprising a sub-pool of questions, a method of assembling the sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, the method comprising:

- A. forming a candidate sub-pool by randomly selecting a plurality of questions from the pool;
- B. determining if the candidate sub-pool satisfies the constraints;
- C. if the constraints are not satisfied, removing the questions of the candidate sub-pool from the pool of questions and repeating steps A, B and C; and
- D. if the constraints are satisfied, storing the candidate sub-pool as the sub-pool.

9. The method of claim 8 further comprising:

- E. when all of the questions from the pool of questions have been removed, restoring the pool with all of the removed questions.

10. In connection with creation of a standardized test comprising a sub-pool of questions, a method of assembling a plurality of disjoint sub-pools from a pool of questions, wherein each sub-pool comprises a plurality of questions and satisfies one or more constraints, the method comprising:

- A. assembling a first collection of intersecting sub-pools;
- B. extracting from the first collection of sub-pools a second collection of sub-pools, wherein the second collection of sub-pools comprises the plurality of mutually disjoint sub-pools; and
- C. storing the second collection of sub-pools.

11. The method of claim 10 wherein assembling each of the sub-pools in the first collection comprises: (i) forming a candidate sub-pool by randomly selecting a plurality of questions from the pool; (ii) testing the candidate sub-pool against the constraints; and (iii) if the constraints are satisfied, storing the candidate sub-pool as the sub-pool;

12. The method of claim 10 or 11, further comprising:

D. computing, for each of the questions in the first collection of sub-pools, a frequency of usage in the first collection of sub-pools;

E. analyzing the questions in the pool of questions based on the computed frequency.

13. A machine-readable medium that includes instructions for assembling a sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, in connection with creation of a standardized test comprising the sub-pool of questions, wherein such instructions, when executed by a computer, cause the computer to:

A. form a candidate sub-pool by randomly selecting a plurality of questions from the pool;

B. test the candidate sub-pool against the constraints; and

C. if the constraints are satisfied, store the candidate sub-pool as the sub-pool.

14. The machine-readable medium of claim 13 wherein the computer is further caused to:

if the constraints are not satisfied, repeat steps A, B, and C.

15. A machine-readable medium that includes instructions for assembling a sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, in connection with creation of a standardized test comprising the sub-pool of questions, wherein such instructions, when executed by a computer, cause the computer to:

A. create a hierarchical representation of the sub-pool,
wherein the hierarchical representation comprises a root node and at least one other node,

wherein at least one of the other nodes comprises a terminal node, and

wherein the root node is associated with one or more root constraints and each of the other nodes are associated with one or more additional constraints;

B. form a candidate question set comprising randomly selecting a plurality of questions from the pool;

C. test the candidate question set against the additional constraints associated with the terminal node;

- D. if the additional constraints are satisfied, test at least the candidate question set against the root constraints.
16. A machine-readable medium that includes instructions for assembling a sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, in connection with creation of a standardized test comprising the sub-pool of questions, wherein such instructions, when executed by a computer, cause the computer to:
- A. create a hierarchical representation of the sub-pool,
wherein the hierarchical representation comprises a root node and at least two other nodes,
wherein at least two of the other nodes each comprise a terminal node, and
wherein the root node is associated with one or more root constraints and each of the other nodes are associated with one or more additional constraints;
 - B. form a first candidate question set comprising randomly selecting a plurality of questions from the pool;
 - C. test the first candidate question set against the additional constraints associated with a first of the terminal nodes;
 - D. form a second candidate question set comprising randomly selecting a plurality of questions from the pool;
 - E. test the second candidate question set against the additional constraints associated with a second of the terminal nodes;
 - F. if the first set of additional constraints and the second set of additional constraints are satisfied, concatenate the first candidate question set and the second candidate question set to form a combined question set; and
 - H. test at least the combined set against the root constraints.
17. The computer-readable medium of claim 16, wherein the computer is further caused to:
- G. if the first set of additional constraints is not satisfied, repeat steps B, C, and F.
18. The computer-readable medium of claim 16, wherein the computer is further caused to:

G. if the second set of additional constraints is not satisfied, repeat steps D, E, and F.

19. A machine-readable medium that includes instructions for assembling a sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, in connection with creation of a standardized test comprising the sub-pool of questions, wherein such instructions, when executed by a computer, cause the computer to:

A. form a sequence of ranges wherein each range in the sequence imposes a constraint on a scalar property of the sub-pool;

B. randomly form a vector comprising a plurality of elements, wherein each of the elements in the vector belongs to at least one range from the sequence; and

C. randomly select a plurality of questions from the pool to form the sub-pool such that each of the scalar properties of the sub-pool is equal to at least one of the elements of the vector.

20. A machine-readable medium that includes instructions for assembling a sub-pool from a pool of questions, wherein the sub-pool satisfies one or more constraints, in connection with creation of a standardized test comprising the sub-pool of questions, wherein such instructions, when executed by a computer, cause the computer to:

A. form a candidate sub-pool by randomly selecting a plurality of questions from the pool;

B. determine if the candidate sub-pool satisfies the constraints;

C. if the constraints are not satisfied, remove the questions of the candidate sub-pool from the pool of questions and repeating steps A, B and C; and

D. if the constraints are satisfied, store the candidate sub-pool as the sub-pool.

21. The computer-readable medium of claim 20, wherein the computer is further caused to:

E. when all of the questions from the pool of questions have been removed, restoring the pool with all of the removed questions.

22. A machine-readable medium that includes instructions for assembling a plurality of disjoint sub-pools from a pool of questions, wherein each sub-pool comprises a plurality of questions and satisfies one or more constraints, in connection with creation of

a standardized test comprising a sub-pool of questions, wherein such instructions, when executed by a computer, cause the computer to:

- A. assemble a first collection of intersecting sub-pools;
- B. extract from the first collection of sub-pools a second collection of sub-pools, wherein the second collection of sub-pools comprises the plurality of mutually disjoint sub-pools; and
- C. store the second collection of sub-pools.

23. The computer-readable medium of claim 22 wherein assembling each of the sub-pools in the first collection comprises: (i) forming a candidate sub-pool by randomly selecting a plurality of questions from the pool; (ii) testing the candidate sub-pool against the constraints; and (iii) if the constraints are satisfied, storing the candidate sub-pool as the sub-pool;

24. The computer-readable medium of claim 22 or 23, wherein the computer is further caused to:

- D. compute, for each of the questions in the first collection of sub-pools, a frequency of usage in the first collection of sub-pools; and
- E. analyze the questions in the pool of questions based on the computed frequency.